Fisheries Program

- Photo by Scott Flaherty

...provide the leadership to conserve, restore and enhance aquatic ecosystems and perpetuate their many benefits for future generations.
- Fisheries Mission

Program Description and Mission

The Region 3 Fisheries Program focuses on a broad range of aquatic resource management and aquatic habitat conservation issues, opportunities and partnerships in an eight-state area encompassing 450,000 square miles with a population of over 54 million people. Primary deepwater aquatic resource features include four of the Great Lakes and connecting waters including the St. Mary's River and Detroit River - Lake St. Clair system, and most of the upper Mississippi River Basin, including portions of the Missouri and Ohio Rivers.

The mission of the Service's Fishery Program is to provide the leadership to conserve, restore and enhance aquatic ecosystems and perpetuate their many benefits for future generations. The Fishery Program operates with several national priorities: restoration and management of interjurisdictional fisheries and habitats; recovery of threatened and endangered species; recovery of candidate species; fulfillment of federal mitigation obligations; and providing technical assistance on Service lands and to Native American Governments.

There are 16 fisheries field stations in Region 3: Five national fish hatcheries; six fishery resources offices; two fishery coordination offices; two sea lamprey control biological stations; and a fish health center.

National Fish Hatcheries

National Fish Hatcheries in Region 3 develop and maintain brood stocks of selected fish strains, provide technical assistance and sources of fish and eggs to cooperating agencies in pursuit of their aquatic resource management goals, provide fish and eggs for research purposes, stock fish and eggs as part of native fish restoration programs, stock fish in fulfillment of federal mitigation obligations, and provide refugia for native freshwater mussels.

Fishery Resources Offices

Fishery Resources Offices perform key monitoring and control activities related to invasive aquatic species, survey and evaluate native fish stocks and aquatic habitats to identify restoration opportunities, play a key role in targeting and implementing native fish and habitat restoration programs, work with private land owners, states, local governments and watershed organizations to complete aquatic habitat restoration projects under the Service's Private Lands program, provide coordination and technical assistance toward the management of interjurisdictional fisheries, maintain and operate several key interagency databases, provide technical assistance to other Service programs addressing contaminants, endangered species, Federal project review and hydropower operation and relicensing, evaluate and manage fisheries on Service lands, and provide technical support to 38 Native American tribal governments and treaty authorities.

Fishery Coordination Offices

Fishery Coordination Offices provide crucial facilitation and interagency coordination functions affecting the management of native fishes and aquatic habitats working both independently and through organizations such as the Mississippi River Interstate Cooperative Resource Association (MICRA), Great Lakes Fishery Commission (GLFC) and the Great lakes Indian Fish and Wildlife Commission (GLIFWC).

Sea Lamprey Control Stations

Sea Lamprey Control Stations implement sea lamprey population assessment and control activities throughout the Great Lakes in a program administered through the State Department and the Great Lakes Fishery Commission.

The Fish Health Center

The Fish Health Center provides specialized fish health evaluation and diagnostic services to Federal, state, tribal, and private hatcheries in Region 3, conducts extensive monitoring and evaluation of the health status of wild fish stocks throughout Region 3, examines and certifies the health of fish taken from wild stocks for addition to captive brood stocks, and performs a wide range of special services helping to interface the National Fish Hatcheries, Fishery Resources Offices, Fish Technology Centers and outside organizations such as the U.S. Geological Survey providing technical input to the Service's Fishery Program.

Region 3 facilities produced over 23 million fish (700,000 pounds) and 55 million eggs during 1998.

- Fish Production and Stocking Accomplishment

Summary of Fiscal Year 1998 Accomplishments

Native Fish Restoration

The Fishery Program's leadership role in restoration of nationally significant native fish stocks expanded significantly during 1998. Personnel continued to focus on expansion of self-sustaining **lake trout** in Lake Superior and efforts to establish self-sustaining populations in Lakes Michigan and Huron. **Lake sturgeon** restoration activities expanded in Lake Superior, Green Bay of Lake Huron, and the lake Huron - Detroit River - Lake St. Clair - lake Erie areas. Lake sturgeon activities on the Menominee Indian reservation continued and an evaluation of the potential for lake sturgeon restoration in the Ohio River was completed. Native **brook trout** restoration activities expanded in Lake Superior with new focus on the Salmon-Trout River, Michigan, collection of wild gametes for a third time from stocks at Isle Royale, Michigan and further evaluation of the status and restoration potential in northern Lake Huron. **Paddlefish** restoration work also expanded, with more fish coded-wire tagged, additional radiotelemetry studies in the Mississippi, Illinois, Wisconsin and Chippewa Rivers, fingerling stocking in the Upper Mississippi River, Lower Missouri River and Arkansas-Red River Ecosystems, and full operation of the Mississippi River Tagging Center under agreement with MICRA and it's 28 member states.

Fish Production and Stocking

We continued to operate five National Fish Hatcheries producing 15 species of fish as part of 131 propagation programs serving Region 3 waters. Region 3 facilities produced over 23 million fish (700,000 pounds) and 55 million eggs during 1998. Our Great Lakes stations produced and stocked 4.4 million yearling lakes trout as part of restoration programs in Lakes Superior, Michigan, and Huron. Our Iron River, Wisconsin and Hiawatha Forest, Michigan facilities continued to manage extensive lake trout brood stocks, while Neosho National Fish Hatchery managed a brown trout brood stock. Isolation of fish taken from wild lake trout and brook trout stocks continued at Genoa National Fish Hatchery, Wisconsin.

Invasive Aquatic Species Control

Our fisheries stations continued to survey Eurasian ruffe and round goby populations throughout the upper Great lakes and to develop and implement control measures. We continued with a major initiative to install an invasive species barrier in the Chicago Waterways in attempt to stop the spread of harmful species from Great Lakes waters into the Mississippi River Basin. We continued our efforts with the U.S. Coast Guard in managing ballast water exchange in the Great Lakes to eliminate the introduction of new exotic species. Staff continued to monitor the spread of zebra mussel within Region 3, and associated impacts to native mussels. And our large rivers stations expanded field efforts in surveying the occurrence of four species of Asian carp in the Mississippi River Basin.

Private Lands and Watershed Restoration

Fishery Resources Office staff at Ashland and LaCrosse, Wisconsin, Alpena, Michigan and Carterville, Illinois lead watershed restoration projects on Whittlesey Creek and Plum Creek, Wisconsin, the Upper Black River and Thunder Bay River, Michigan, Big Darby Creek, Ohio and the Marquette Side Channel - Mississippi River. Our Ashland FRO was instrumental in establishing the Lake Superior Coastal Wetlands Initiative.

Fish Health Operations

The Fish Health Center in LaCrosse, Wisconsin , completed 189 fish health case histories in 1998 representing 522 lots and 21,647 fish. This represents a five-percent increase over 1997. The Center collected and examined 1,662 feral fish from 32 sampling sites in seven states for diseases of concern as part of the ongoing national wild fish health survey. The Center also presented two on-site training courses to 837 students from federal, state, tribal and commercial agencies, universities and members of the public during 1998. The Center continued ongoing efforts to monitor the health status of brood stock and production fish at five National Fish Hatcheries in Region 3 and to ensure disease free status of wild fish transferred to Region 3 Hatcheries for addition to brood stocks.

Sea Lamprey Control

The Service's Sea Lamprey Control Program, administered through the State Department and the Great Lakes Fishery Commission (GLFC), is presented in detail in a bi-national annual report to the Commission. Highlights for 1998 include the assessment of adult and juvenile sea lamprey populations in 190 tributaries and 6 offshore areas in the Great Lakes; treatments for control of sea lamprey in 33 streams; release of 26,317 sterile male sea lampreys for control purposes; and pursuit of barrier projects at nine locations. Sea Lamprey Control Program staff also served on numerous tasks forces, work groups and other management committees in the Great Lakes during 1998.

The successful control program continues to ensure sport fish rehabilitation in the Great Lakes and protect a fishery valued at over $4.0 billion.
- Sea Lamprey Control Accomplishment

USFWS Photo

Goals for Fiscal Year 1999

Native Fish Restoration

- Complete interagency planning process through the Lake Superior Committee and initiate native brook trout restoration activities in the Salmon-Trout River and other sites in Lake Superior.
- Complete the collection of wild Lake Superior strain brook trout from Isle Royale stocks and continue the transfer of fish from isolation facilities to hatcheries for brood stock development.
- Complete the three-year assessment of the status and potential for restoration of native Lake Huron brook trout and begin interagency restoration planning through the Lake Huron Committee.
- Continue evaluation of potential for restoration of native Lake Superior lake sturgeon in the Sturgeon River, Bad River, and other Lake Superior sites.
- Continue radiotelemetry studies of lake sturgeon in Green Bay, Lake Michigan, complete interagency restoration planning and initiate restoration activities as appropriate.
- Continue to coordinate interagency management processes addressing lake sturgeon conservation in southern Lake Huron, the Detroit River - Lake St. Clair system and western Lake Erie.
- Continue coded-wire tagging studies of lake trout in the upper Great Lakes in support of ongoing restoration efforts.
- Continue offshore reef artificial turf stocking of lake trout in Lakes Michigan and Huron as part of ongoing restoration efforts.
- Continue development and management of interagency Great Lakes lake trout databases through Green Bay FRO in support of restoration programs.
- Continue radiotelemetry and tagging studies of paddlefish in the Mississippi, Missouri, Ohio, Illinois, Wisconsin and Chippewa Rivers in support of inetragency restoration programs.
- Continue to operate the Mississippi River Tagging Center through Carterville, Illinois and Columbia, Missouri FROs per agreement with the Mississippi River Cooperative Resource Association.
- Continue evaluation of lake sturgeon in the Ohio River and explore potential for restoration projects.

Fish Health

- Provide fish health inspection, certification and diagnostic services to federal, state, tribal, private and research stakeholders in region 3.
- Conduct quality fish health assessments at National Fish Hatcheries to establish a data base for detecting trends in health of hatchery reared trout.

Fish Health (continued)

- Conduct continuing fish health assessments of feral fish populations in rivers and Great Lakes waters as part of the national program.
- Provide two training courses (Introduction to Fish Health and Techniques in Fish Diagnostics), and give seminars and presentations to schools, aquaculture associations, professional fishery societies and other Federal, state and tribal agencies.
- Complete ongoing study of parasite community assemblages and histopathology of siscowet lake trout from Lake Superior.
- Assess risks of Whirling Disease in the Great Lakes Region.
- Evaluate use of PCR as a diagnostic tool for pathogens.
- Continue studies of nonlethal detection of pathogens.
- Provide services to maintain disease free status of future brook trout and lake trout brood stock in isolation facilities at Genoa National Fish Hatchery, Wisconsin and at Keweenaw Bay Tribal Hatchery, Michigan.
- Continue working on fish disease screening of paddlefish and coaster brook trout as part of Stewardship projects.
- Maintain the Investigational New Animal Drug program at National Fish Hatcheries in Region 3.
- Complete and deliver a proposal to establish a Fish Technology Center in Region 3.

Fish Production and Stocking

USFWS Photo

- Meet the fish and egg distribution numbers requested in the Fishery Information System.
- Support the national brood stock program to ensure the stability of genetically important fish strains.
- Maintain lake trout, brown trout and brook trout brood stock strains to support restoration, mitigation, and recreational fisheries programs within and outside of Region 3.
- Maintain proficient operation of the regional brood stock isolation facilities at Genoa National Fish Hatchery and through partnership at the Keweenaw Bay Indian Community Tribal Hatchery.
- Establish fish health protocols for each National Fish Hatchery in region 3.
- Collect, enter, and maintain fish cultural data for inclusion in the national FIS and FONS data base.
- Ensure proper alignment of all Region 3 production programs with national Fishery Program priorities.
- Plan, direct and complete Maintenance Management System priority projects scheduled for Region 3 hatcheries.
- Initiate new outreach efforts and partnerships for Region 3 Hatcheries including new “friends” groups, increased visitor use of facilities, increased volunteer time, initiation of an “adopt a hatchery” program, new outreach efforts with local, state and Federal government, and new partnerships with local conservation groups.

Invasive Species Control

- Continue surveillance and control activities targeting Eurasian ruffe in Lakes Superior, Michigan, Huron and Erie.
- Continue surveillance and control activities targeting round goby in the Great Lakes.
- Continue the Chicago Waterways NIS Dispersal Barrier project.
- Participate in the 100th Meridian Initiative to prevent the westward spread of zebra mussel.
- Continue surveillance and control activities to prevent the spread of zebra mussel into the St. Croix River.
- Continue to work with ballast water management to prevent the introduction and spread of invasive species in the Great Lakes.
- Continue participation on the Great Lakes Panel on Aquatic Nuisance Species.
- Prepare a proposal for the Aquatic Nuisance Species Task Force on surveillance and control activities for four species of Asian carp (black, grass, silver and bighead) in the Mississippi River Basin.

Sea Lamprey Control

- Sea Lamprey Control Program goals are delineated in the Fiscal Year 1999 Memorandum of Agreement between the Service and Great Lakes Fishery Commission.

Fish Passage

- Establish and fill the position of fish passage program coordinator for Region 3, to provide primary linkage with program delivery from Washington, facilitate the assembly of information on (non-FERC) fish passage obstacles in Region 3 waters and assist the Regional Office in coordinating fish passage field projects.
- Initiate a review of fish passage issues, obstacles and related impacts to native fish populations in Region 3 waters, and feed this information into the national data base under development in the Washington Office.
- Initiate a process to identify the highest priority fish passage issues, obstacles and focus areas in Region 3 waters.

Accomplishments of the Ashland Fisheries Resource Office are now posted on the Fishery Resource Office's web page. The Fishery Resource Office can now easily share its fish and wildlife resource accomplishments with the public.

- Ashland Fisheries Resourse Office

Watershed Restoration

- Continue to provide technical assistance to private land owners in the restoration of wetlands and stream habitat in northern Wisconsin (Ashland FRO) and expand similar activities in northern Michigan (Alpena FRO) through the Partners for Fish and Wildlife Program.
- Continue with stream restoration activities (complete projects on Whittlesey Creek and plan for projects on Terwilliger Creek) on Whittlesey Creek National Wildlife Refuge, Wisconsin.
- Initiate restoration activities on the Salmon-Trout River, Michigan.
- Continue active participation in the Lake Superior Coastal Wetlands Initiative.
- Restore additional sites in the Upper Black and Thunder Bay Rivers, Michigan.
- Complete an additional five projects under the Aquatic Habitat Restoration initiative that began in FY 1997 with the first Patoka River project.
- Develop at least five proposals for funding under the new Clean Water Action -Watershed Restoration program within the Partners for Fish and Wildlife subactivity.

USFWS Photo

Complete an additional five projects under the Aquatic Habitat Restoration Initiative...
- Fiscal Year 1999 Watershed Restoration Goal

Outreach Efforts and Partnerships

- Partnership with 22 Mississippi River Basin States in operating the paddlefish tagging center through MICRA.
- Great Lakes-wide data base management at Green Bay FRO in partnership with GLFC, CLC, Canada, Ontario, eight Great Lakes states, 5 tribal governments and COTFMA.
- Whittlesey Creek NWR partnerships including Wisconsin DNR, USDA Forest Service, and private groups.
- Lake Superior Coastal Wetlands Initiative.
- Watershed restoration partnerships in the Upper Black and Thunder Bay Rivers, Michigan.
- Partnership with U.S. Army Corps of Engineers in restoration of the Marquette Side Channel, Mississippi River.
- Lake sturgeon restoration partnerships in Lake Superior, Green Bay, and the Lake Huron - Lake St. Clair - lake Erie area.
- Partnerships with tribal governments, COTFMA and GLIFWC in assisting with the management of fishery resources in the 1836 and 1837 Ceded Territories.
- 18 Cooperative Agreements with tribal governments to provide technical assistance toward the management of resources on tribal lands in region 3.
- Chicago Waterways dispersal barrier project partnership.
- Great Lakes ballast water management partnership.
- Partnership with the Keweenaw Bay Indian Community in isolating wild lake trout and brook trout strains for addition to brood stock at Region 3 hatcheries.
- Partnership with Isle Royale National Park in collecting gametes from wild brook trout for development of brood stock for restoration stocking program.
- Partnership with Pictured Rocks National Lakeshore in stocking native brook trout into lakes within the Park.
- Partnership efforts with USEPA, Great lakes National Program Office (GLNPO), in studying mass balance, trophic relationships, and occurrence of toxic substances in fishes in Lake Michigan.
- Partnership efforts with USEPA - GLNPO in restoration of lake sturgeon to waters of Lakes Superior and the Detroit River.
- Partnership with USGS in collecting round goby from Calumet Harbor, Lake Michigan for toxicity tests.
- Partnership with USGS in collecting fishery samples for use in the National Water Quality Assessment Program.
- Partnership with USDA Forest Service, Chippewa National Forest, in conducting fishery surveys on Forest streams.

Prepare a proposal for the Aquatic Nuisance Species Task Force on surveillance and control activities...
- Fiscal Year 1999 Goal

Great Lakes Ecosystem

Impact of Eurasion Ruffe Presented to Numerous Audiences

Ashland Fishery Resource Office

Conclusions drawn from the International Ruffe Symposium held in Ann Arbor, Mich., during March, 1997, stated that alleged harm to native fish communities by Eurasian ruffe was largely unproven and inconclusive. However, research presented by the University of Minnesota in the poster session described some proven impacts that were not addressed in the verbal session. The Service's Ashland Fishery Resources Office summarized these impacts along with comments gathered from European fishery biologists experienced with recent ruffe introductions. This information was part of a 15 minute presentations made to the 59th Midwest Fish and Wildlife Conference on December 9, 1997; the 2nd Annual Chequamegon Bay Area Natural Resources Conference on March 3, 1998; the Wisconsin Department of Natural Resources Fisheries Management and Habitat Protection Statewide Training Conference on March 11, 1998; to Service Region 3 Director, Bill Hartwig and other Region 3 staff members on April 29, 1998; and a group of high school honor students working for the Cable Natural History Museum of Cable, Wis., July 30, 1998. The presented contained the most recent information and research from the University of Minnesota and observations from European biologists relating to potential and proven impacts of eurasian ruffe. **12/97**

Service Gathers Data for Tribal Walleye Harvest

Ashland Fishery Resources Office

The Natural Resources Department of the Bad River Band of Lake Superior Chippewa, as the primary steward of Kakagon Slough, limit and monitor an annual tribal subsistence walleye fishery in this system. Harvest limits are periodically evaluated by the Band to maintain and protect this thriving walleye fishery, the second largest in Wisconsin waters of Lake Superior. In April, biologists from the Service's Ashland Fishery Resources Office and Bad River Natural Resources Department conducted mark and recapture surveys to estimate the number of adult walleye spawning in the Kakagon Slough. A total of 548 adult walleye were captured and marked near the mouth of Kakagon Slough prior to the spring spawning run. Fyke nets set upriver by Tribal Fish Hatchery staff for egg collection were used for the recapture effort. A total of 2,056 walleye were captured and checked for marks. Information from these surveys was used to set the 1998 tribal subsistence harvest limit and will provide additional information on the structure of the Kakagon Slough walleye stock. **4/98**

Michigan Fifth-Graders Learn About Fish Sampling

Alpena Fishery Resource Office

Service fishery biologists gave an educational presentation to Mike Baarlaer's fifth grade class at Camp Chickagami on June 9, 1998. Camp Chickagami is situated on Lake Esau in Presque Isle County, Michigan. Biologist Hill presented fisheries sampling gear, discussed fish morphology and physiology, and explained careers in fisheries. Aide Abdella presented aquatic invertebrates, discussing morphology, physiology, and the importance of insects to aquatic and terrestrial food webs. Finally, the students seined for fish, catching rainbow darters, log perch, and emerald shiners. Approximately 15 students participated in the event. **6/98**

Alpena Hosts Lake Sturgeon Internal Sexing Workshop

Alpena Fishery Resource Office

Office staff attended a lake sturgeon internal sexing and state of maturity workshop June 23, 1998. The workshop was hosted by the Alpena Fishery Resource Office and the Ontario Ministry of Natural Resources-Lake Huron Management Unit. The workshop was instructed by Senior Fishery Biologist Ron Bruch from the Wisconsin Department of Natural Resources. Workshop attendees learned to determine sex and state of maturity of lake sturgeon after examination of the gonad. Thirty workshop participants then tested the newly learned techniques on 50 lake sturgeon. The workshop offered most participants their first chance to handle live lake sturgeon. **6/98**

Alpena Hosts Fishery Workshop For Elementary Students

Alpena Fishery Resource Office

Alpena Fishery Resource Office staff members presented a fisheries workshop to 50 elementary school children participating in the Youth Volunteer Corps' "Summer in Science" day camp, July 15, 1998. The children visited five stations, each offering some hands-on activity. Stations incorporated fish identification, fish senses (touch, smell, sight,) aquatic insects (what fish eat,) gear used to capture fish and exotic fish to the Great Lakes. Live fish and sea lamprey donated by the Hammond Bay Biological Station were displayed. This workshop will be repeated July 29, 1998 during the second session of the summer day camp. **7/98**

Lake, Coaster Brook Trout Receive Antibiotic Injections at Iron River Hatchery

LaCrosse Fish Health Center

Staffs from several Federalhatcheries and one tribal fish hatchery came together August 25-26, 1998 to assist the La Crosse Fish Health Center administer an antibiotic to thousands of lake trout and coaster brook trout at the Iron River National Fish Hatchery. Bacteria that causes a kidney disease in salmonid was discovered by biologists during a recent routine fish health inspection at the Iron River facility. Erythromycin phosphate, an antibiotic, was injected into the fish to reduce or eliminate the bacterial organism. Partners in the effort included the Iron River, Pendills Creek, and Jordan River National Fish Hatcheries; and the Red Cliff Tribal Fish Hatchery. **8/98**

Service Surveys Breeding Birds on Tribal Land in Northwest Minnesota

Ashland Fishery Resource Office

The Red Lake Farm and adjacent Kiwosay Wildlife Sanctuary in northwest Minnesota are owned by the Red Lake Band of Chippewa Indians and are managed by the Tribal Department of Natural Resources to promote wildlife habitat values. Phase I objectives of the recent Red Lake Farm Habitat Restoration Project included the inventory of wildlife populations in the farm for a baseline to guide future management projects. The U. S. Fish and Wildlife Service, Ashland Fishery Resources Office, assisted Red Lake Farm by conducting breeding bird surveys in the Farm and the Kiwosay Wildlife Sanctuary. The objectives of the study were to provide the following information: A list of bird species found in each target habitat type; crude relative abundance and density data for each species in each habitat type; and total densities for each species in each habitat type. The first surveys were conducted in June 1997 and were reported for the first time. The 1997 surveys were not conducted according to Region 3 protocol, and were not directly comparable to the 1998 results, which were reported in detail in this report. **8/98**

Breeding Bird Survey Conducted Near Proposed National Wildlife Refuge Site

Ashland Fishery Resource Office

The outlet of Whittlesey Creek on Wisconsin's Bayfield Peninsula, is encompassed by an area proposed for addition to the national wildlife refuge system. The proposed refuge will be designated primarily, but not exclusively, for the enhancement and protection of habitats for the Lake Superior coaster brook trout, *(Salvelinus frontinalis*.) With responsibilities of the U. S. Fish and Wildlife Service for the management of migratory birds and conserving and restoring wetlands, coupled with the heightened awareness of neotropical non-game land birds, there is also a need for breeding bird information in and around the proposed refuge for a baseline and monitoring to assist in management decisions for the area. Recently, ecosystem "indicator" status was conferred regionally by the Lake Superior Work Group of the U.S. - Canada Binational Program to neotropical bird abundance and diversity because of the link between the health of forest bird communities with habitat conditions. The Whittlesey Creek study area within the Lake Superior basin, therefore, was a timely initiative for the program goals. The author presented information on habitat and occurrence of birds in June 1998, recorded from point counts, and briefly compared some data with the nearby Apostle Islands and Bad River. **9/98**

Service, Lake Huron Fishers Partner For Sturgeon Genetic Sampling Effort

Alpena Fishery Resource Office

Alpena Fishery Resource Office staff met with several Michigan state-licensed commercial fishers assisting with the lake sturgeon work on Lake Huron on September 22, 1998. The purpose for the visit was to provide the fishers with equipment for collecting genetic samples from lake sturgeon which they encounter as by-catch in their trap net fishery. Genetic samples collected as a result of this work will be the first samples collected from Saginaw Bay lake sturgeon. **9/98**

Alpena Staff Tour Sturgeon Spawning Areas on the Detroit River

Alpena Fishery Resource Office

Staff from the Alpena Fisheries Resource Office toured the Detroit River September 22, 1998, with Detroit River musky fisherman Jim Johnson. The river tour gave Service staff first hand knowledge of lake sturgeon spawning sites that will be sampled during the 1999 field season. In addition to the historically known spawning sites, other potential spawning sites were identified as a result of the tour. Jim Johnson has fished the Detroit River for 40 years and is proving to be a critical contact for building partnerships for this Detroit River lake sturgeon project. **9/98**

Alpena Fishery Resource Office to Produce Great Lakes Lake Sturgeon Video

Alpena Fishery Resource Office

The Alpena Fishery Resource Office is partnering with the Earthwave Society and other state and international resources agencies to produce a public outreach video about lake sturgeon of the Great Lakes. Production of the 20-minute video is slated to begin in April 1999 and be completed by September 1999. The video will be distributed to state and federal agencies, educational institutions, public schools and libraries, and conservation groups. The video should help to foster public support and participation in lake sturgeon restoration efforts. **9/98**

Sea Lampreys Destroyed in Great Lakes' Tributaries, Lake Trout Saved

Ludington Biological Station

The Service conducts a sea lamprey control program under contract with the Great Lakes Fishery Commission. During September 1998, Seven tributaries to the Great Lakes --four on Lake Superior, three on Lake Huron-- were treated with lampricide, destroying about 598,000 larval sea lampreys. Included in this total are about 31,700 larvae that would have transformed into the parasitic phase and entered the Great Lakes this year. Each parasitic phase sea lamprey is capable of killing upwards of 40 pounds of fish during its year long parasitic phase. The successful control program continues to ensure sport fish rehabilitation in the Great Lakes and protect a fishery valued at over $4.0 billion. Partners in the effort include the Marquette and Ludington Biological Stations, Bad River Band of Chippewa, and the Great Lakes Fishery Commission. **9/98**

Ashland Fishery Resource Office Assumes Eurasion Ruffe Population Study

Ashland Fishery Resource Office

The Eurasion Ruffe Population Investigation Study began in 1995 as a long term study to monitor the abundance of ruffe and native fishes in Lake Superior tributaries where ruffe have been discovered or likely to be discovered. The objective is to assess any changes in these fish communities as the potential result of the presence of ruffe. From 1995 through 1997, Ashland Fishery Resource Office contracted with the Lake Superior Biological Station, Great Lakes Science Center, which is now part of U.S. Geological Survey, to perform and report on this study. The results of their effort will serve as a basis to document any future changes in sizes and structures of fish populations in these tributaries, as it is too early in the study to reveal any noticeable trends. In 1998, Ashland Fishery Resource Office assumed the performance of this study, but due to budget and time limitations, the number of tributaries included in this study was reduced from 10 to 4. Three of the four tributaries currently in the study have been occupied by ruffe since the onset of the study, but ruffe were first detected in the Ontonagon River, Mich., in 1994, and this river currently represents the eastern boundary of the ruffe range on the south shore of Lake Superior. The rivers are sampled with seines and trawls once each during spring, summer, and fall. The fall sampling was just accomplished during the week of September 28th, and the study has been completed for 1998. **9/98**

September Larval Sea Lamprey Assessment in the Great Lakes

Ludington Biological Station

The Service conducts a sea lamprey control program under contract with the Great Lakes Fishery Commission. During September 1998, 10 Lake Superior, 15 Lake Michigan, four Lake Huron and two Lake Erie tributaries were assessment by Service personnel. Surveys were conducted to prepare streams for lampricide application in 1999, evaluate the status of larval populations in streams that may be ranked for lampricide application in 1999 and 2000, and search for new infestations and evaluate treatment effectiveness. The successful sea lamprey control program continues to ensure sport fish rehabilitation in the Great Lakes and protect a fishery valued at over $4.0 billion. **9/98**

Eurasion Ruffe Surveyors Complete Seventh Season

Ashland Fishery Resource Office

Ashland Fishery Resource Office began surveillance of Eurasion ruffe in 1991, and has coordinated the surveillance efforts in the Great Lakes as well as assuming the senior authorship in the annual report. Presently, Ashland Fishery Resource Office is joined in the surveillance effort and shares report authorship with the Alpena and Lower Great Lakes Fishery Resource Offices, and the Ontario Ministry of Natural Resources, Lake Superior Management Unit. For the fourth consecutive year, no range expansion by ruffe was detected in the Great Lakes in 1997, but increases in abundance were observed in some locations within the ruffe range. Total reported effort in 1997, both dedicated and incidental, consisted of nearly 40 hours of bottom trawling, 573 trap nights, 55 nights of gill netting, and 4 hours of electro shocking. This effort resulted in a total catch of 604 ruffe. The current range of ruffe in Lake Superior extends from Duluth-Superior harbor (origin) to Thunder Bay, Ontario on the north shore; and Ontonagon, Mich., on the south shore. In Lake Huron, ruffe have only been found near Alpena, Mich. No ruffe have been found in Lake Erie or Lake Ontario. Other contributors to the surveillance report include the Marquette Biological Station, the Great Lakes Indian Fish and Wildlife Commission, U.S. Geological Survey-Biological Research Division Lake Superior Biological Station, the Red Cliff Band of Lake Superior Chippewa Fisheries Department, the Chippewa/Ottawa Treaty Fish Management Authority, the Minnesota Department of Natural Resources, and many sport anglers. **3/98**

Consolidation of Information Subject of Lake Sturgeon Work Group Meeting

Alpena Fishery Resource Office

Biologist Tracy Hill and Project leader Jerry McClain traveled to Niagara Falls, Ontario, March 24, 1998, for the annual Interbasin lake sturgeon work group meeting. Biologist Hill chaired the meeting which was attended by all current members of the work group. Each agency or university representative presented highlights of their lake sturgeon activities with emphasis on the 1997 field season. Considerable time was spent discussing development of a lake sturgeon database that would consolidate information from all sources. Biologist Hill will serve the lead role in developing and maintaining the database for the group. **3/98**

U.S. Geological Survey's Eurasion Ruffe Study Released, Service to Continue Study

Ashland Fishery Resource Office

Fishery managers fear the Eurasion ruffe, an exotic nuisance fish, will impact fisheries and aquatic ecosystems. The study, began in 1995, looked at ruffe and native fish communities in 10 rivers tributary to Lake Superior, where ruffe colonies range from well-established to not yet established. Results show that where ruffe are longest established, they are most dominant in the fish community. The Ashland Fishery Resources Office will continue the study on a set of four rivers in 1998. **3/98**

Ashland's Fishery Participates in Student "Wetlands Summit"

Ashland Fishery Resource Office

Tom Busiahn delivered the keynote address to high school students at a Wetlands Summit organized by the Waterwatch Program at the Sigurd Olson Environmental Institute, Ashland, Wisconsin. Groups of students from more than 20 high schools participated. Each student gave their own presentations on wetlands. **5/98**

Movement and Growth of Larval Sturgeon Documented

Ashland Fishery Resource Office

Larval lake sturgeon movement and growth was tracked in the Bad River, Wisconsin, by the Service's Ashland Fishery Resource Office and Bad River Band of Lake Superior Chippewa. Larval lake sturgeon were captured at the spawning grounds and eight miles downstream. Over this distance and a period of two weeks average length of larval sturgeon doubled from 9 - 21 mm. Information on the timing and duration of larval lake sturgeon movement and their growth will assist fishery agencies with management and rehabilitation of this rare species. **5/98**

LaCrosse Fisheries Office Hosts Fishing Day at Tomah

LaCrosse Fishery Resource Office

More than 100 veterans were hosted to a day of fishing fun during Tomah Fishing Day held in May 1998 at the Veterans Administration Hospital in Tomah, Wisconsin. Prizes were provided and a great fish lunch was supplied by the crew from Genoa National Fish Hatchery. The LaCrosse Fish Health Center set up a fantastic display on their work. Other participants/ sponsors included the LaCrosse Fisheries Resource Office, Genoa National Fish Hatchery, Tomah Middle School, American Legion of Wisconsin and Tomah VA Hospital. **5/98**

Nine Great Lakes' Tributaries Treated During Lamprey Control Effort

Ludington Biological Station

The Service conducts a sea lamprey control program under contract with the Great Lakes Fishery Commission. During May 1998, 9 tributaries to the Great Lakes were treated with lampricide and about 0.6 million larval sea lampreys were destroyed. Included in this total were about 19,800 larvae that would have transformed into the parasitic phase and entered the Great Lakes this year. Each parasitic phase sea lamprey is capable of killing 40 pounds of fish during its destructive year long parasitic phase. The successful control program continues to ensure sport fish rehabilitation in the Great Lakes and protect a fishery valued at over $4.0 billion. **5/98**

Service Acts to Save Red Cliff Band Tribal Hatchery Brood Stock

Ashland Fishery Resource Office

The Red Cliff Band of Lake Superior Chippewa has a progressive fishery management program and modern fish hatchery, which rears the rare "coaster" brook trout of Lake Superior. Due to a severe financial crisis, the tribe laid off fisheries staff, and the brood stock were threatened. The Service contributed $9,000 in a grants (from 3 offices), and performed fish health diagnostics without reimbursement. The Service also helped arrange a $3,500 grant from Trout Unlimited. The Bureau of Indian Affairs contributed additional funds, ensuring that the hatchery program, its brood stock, and its many cooperative projects would go on without interruption. **5/98**

Service Secures Grant for Lake Sturgeon Restoration

Ashland Fishery Resource Office

The Service, Ashland Fishery Resources Office and two cooperators, Bad River and Red Cliff Bands of Lake Superior Chippewa, have been awarded a $55,000 grant from the U.S. Environmental Protection Agency's Great Lakes Protection Fund to develop sturgeon rearing capabilities and conduct an egg collection and rearing pilot project in 1999. This effort is part of a lake-wide, multi-agency, effort to rehabilitate lake sturgeon populations in Lake Superior. The Bad River is one of only two rivers in U.S. waters of Lake Superior that support a self-sustaining lake sturgeon population. The Service and Tribes will use the grant to develop hatchery facilities and expertise and determine the feasibility of the Bad River serving as a source of eggs. Eggs collected and reared will be used to augment the Bad River population and assist rehabilitation efforts elsewhere in Lake Superior. **9/98**

College's Summer Ecology Class Visits the Alpena Fishery Resource Office

Alpena Fishery Resource Office

Biologists Hintz and Hill and Technicians Koproski and Abdella educated student from the Alpena Community College Summer Ecology Course (Upward Bound program) about aquatic exotics, the local fish community, and the Service. Preserved eurasian ruffe, round goby, and zebra mussels were on display and the students viewed bottom trawling activities in the Thunder Bay River. The trawl catch was examined during the presentation to provide students with hands-on experience with different fish species and their function in the local fish community. **6/98**

Service Trawlers Play Vital Role in Chicago Barrier Project

Ashland Fishery Resource Office

Small craft trawling has been the most effective method for collecting and monitoring the range of the eurasian ruffe. Small trawlers are also demonstrating their effectiveness in capturing the round goby in the metropolitan Chicago canal system. The Chicago Barrier Project was designed to keep the round goby and eurasian ruffe from spreading into the Mississippi River and Mississippi River exotics from spreading into the Great Lakes. The Service has been tasked with monitoring the range of the round goby in the Chicago Canal System so that the barrier can be constructed outside its current range. The

Ashland Fishery Resource Office trawler has assisted in all three goby round-ups and has been instrumental in monitoring the range of the goby in the Cal-Sag Canal. Small trawlers from La Crosse and Alpena Fishery Resource Office's joined the effort during the second round-up. Together, Fishery Resource Office small trawlers have successfully tracked the goby through the Chicago Canals as well as collect gobies for research. **6/98**

Michigan Streams Assessed for Brook Trout Spawning Habitat

Alpena Fishery Resource Office

Six streams in the eastern Upper Peninsula of Michigan were assessed for coaster brook trout spawning habitat June 16-18, 1998, by Heather Enterline and Jennifer Abdella of the Alpena Fishery Resource Office. All streams were walked upstream from their mouths to check for barriers migrating trout may encounter. Water chemistry data was taken, and potential spawning habitat was located and assessed. **6/98**

Survey Conducted For Thunder Bay River Wetland Restoration

Alpena Fishery Resource Office

Site 22 of the Thunder Bay River was assessed recently by biologists Heather Enterline, Alpena Fishery Resource Office and Brad MacNeill, Thunder Bay Power Fisheries. The site has been scheduled for restoration in Fiscal Year 1998, funding being provided by a Service Fisheries Habitat Restoration proposal. The site was measured and filmed in order for engineering plans to be completed by Thunder Bay Power. **6/98**

More than 16,000 Sterile Lampreys Released in Great Lakes Streams

Marquette Biological Station

The Service conducts a sea lamprey control program under contract with the Great Lakes Fishery Commission. As part of this integrated pest management program, the Marquette Biological Station sterilized over 16,000 male sea lampreys for release into Great Lakes tributaries during May. Sterilized male sea lampreys compete with normal males for mates and reduce reproductive success. The sterile male release technique has been used to help control sea lampreys in the St. Marys River and Lake Superior since 1991. Personnel from the Service (Service) and Canadian Department of Fisheries and Oceans harvested male sea lampreys from tributaries to Lakes Superior, Michigan, Huron and Ontario during their spawning migration. Males were transported to a sterilization facility located at the Lake Huron Biological Station (U.S. Geological Survey, Biological Research Division) where Service employees sterilized them. During May, over 12,000 sterile males were released in the St. Marys River and about 4,000 sterile males were released in 5 study streams in the U.S. and Canada. Normal male and female sea lampreys were also released into 8 study streams. The study is being conducted over a period of four years to evaluate the effect of sterile male releases. **6/98**

Sterile Lampreys Released in the St. Marys River

Marquette Biological Station

The Service conducts a sea lamprey control program under contract with the Great Lakes Fishery Commission. As part of this integrated pest management program, the Marquette Biological Station sterilized 2,890 male sea lampreys and released them into the St. Marys River during June. Sterilized male sea lampreys compete with normal males for mates and reduce reproductive success. The sterile male release technique has been used to help control sea lampreys in the St. Marys River and Lake Superior since 1991. Personnel from the Service and Canadian Department of Fisheries and Oceans harvested male sea lampreys from tributaries to Lakes Superior, Michigan, and Huron during their spawning migration. Males were transported to a sterilization facility located at the Lake Huron Biological Station where Service employees sterilized them. **6/98**

More than 47,000 Sea Lampreys Trapped During May Assessments on the Great Lakes

Marquette Biological Station

The Service conducts a sea lamprey control program under contract with the Great Lakes Fishery Commission. During May 1998, 47,700 adult sea lampreys were captured in assessment traps placed in 43 tributaries to the Great Lakes. Of these, 21,107 were captured in the Manistique River, Lake Michigan. Each parasitic phase sea lamprey is capable of killing 40 pounds of fish during this destructive, year long parasitic phase. The successful control program continues to ensure sport fish rehabilitation in the Great Lakes and protect a fishery valued at over $4 billion. **6/98**

Service Trawls for Whitefish in Lake Michigan— Part of Fish Health Study

LaCrosse Fish Health Center

Terrance Ott, of the LaCrosse Fish Health Center with help from the Michigan Department of Natural Resources on board the commercial trawler, "Robert Lewis," collected several thousand lake whitefish by trawling in Green Bay, Lake Michigan. Tissue samples were dissected from 60 of these fish and will be used in the National Wild Fish Health Survey Program for 1998. Preliminary results from the survey indicate the lake whitefish are in good physical shape. There was no apparent abnormalities identified during the examination. Findings on fish disease pathogens from this survey will be entered into a National Database System. The study will also be provided to the Michigan Department of Natural Resources. **7/98**

Coaster Brook Trout Inspected at Redcliff Tribal Hatchery

LaCrosse Fish Health Center

John Whitney, fisheries biological technician traveled to Northern Wisconsin to conduct a semi-annual fish health inspection at Redcliff Tribal Fish Hatchery, Redcliff, Wisconsin. A total of four lots of Coaster brook trout, a strain originating from Canada, were examined for the presence of "certifiable" fish pathogens according to the Federal Fish Health Policy and Great Lakes Fish Health Policy. Laboratory results on tissue samples taken are still pending. **7/98**

Assault on Lake Huron's Sea Lampreys Begins

Ludington Biological Station

The Service conducts a sea lamprey control program under contract with the Great Lakes Fishery Commission. In July, 35 Service staff and partners conducted the initial lampricide application of Granular Bayluscide (3.2 percent) to about 200 acres of the St. Marys River. Targeted were nearly 468,000 larval sea lampreys of the estimated 5.2 million larvae that infest the river. This work is the next step of an integrated process to gain effective control of sea lamprey populations in this large connecting channel between Lakes Superior and Huron. In addition to treating high density areas of larval infestations with Bayluscide, sterilized male sea lampreys are introduced and traps catch many more spawning phase adult sea lampreys each spring. Implementation of control activities in the St. Mary's River adds to the successful control program and continues to ensure sport fish rehabilitation in the Great Lakes and protect a fishery valued at over $4.0 billion. **7/98**

Three Sites Repaired as Part of Thunder Bay River Restoration

Alpena Fishery Resource Office

Service work crews began work on the Thunder Bay River Restoration June 15, 1998. Funded by grants from National Fish and Wildlife Foundation Fisheries Across America and Michigan Department of Natural Resources Inland Fisheries Grants, the North-Eastern Michigan Council of Governments and private donors, the crew will repair 10 stream bank sites where excessive erosion has occurred. To date, three sites have been repaired, one of the sites being a canoe launch in an Avery Township park. Work on the sites will continue until September. **7/98**

Sterile Lampreys Released in St. Mary's River

Marquette Biological Station

The Service conducts a sea lamprey control program under contract with the Great Lakes Fishery Commission. As part of this integrated pest management program, the Marquette Biological Station sterilized 1,476 male sea lampreys during the month of July and released them into the St. Mary's River. Release of sterilized males has now concluded for the 1998 season. The release of sterile males and removal of lampreys by traps will reduce lamprey reproduction in the river by 85 percent during 1998. Sterilized male sea lampreys compete with normal males for mates and reduce reproductive success. The sterile male release technique has been used to help control sea lampreys in the St. Mary's River and Lake Superior since 1991. Personnel from the Service and Canadian Department of Fisheries and Oceans harvested male sea lampreys from tributaries to Lakes Superior, Michigan, and Huron during their spawning migration. Males were transported to a sterilization facility located at the Lake Huron Biological Station where Service employees sterilized them. **7/98**

Fishery Workshop held for "Summer in Science" Camp

Alpena Fishery Resource Office

On July 15, 1998, Alpena Fishery Resource Office staff members presented a fisheries workshop to 50 elementary school children involved in the Youth Volunteer Corps "Summer in Science" day camp. The children rotated through five

information stations offering hands-on activities. Biologist Hintz had a fish identification station with live fish and explained unique characteristics of locally common fish species. Biologist Hill showed the children various gear used at the Fishery Resource Office and explained why certain gear is used for targeting the various species of fish. Technician Koproski discussed the various senses a fish uses, displayed fishing lures and showed how certain lures are made to appeal to these senses. Biological Science Aide Abdella taught a station discussing what fish eat, with an emphasis on aquatic macroinvertebretes. Abdella had samples of common aquatic insects found in Michigan for the children to see and touch. Technician Enterline, who coordinated the event, discussed some of the exotics to the Great Lakes, and how they got there. Enterline also had two live sea lampreys, donated by the Hammond Bay Biological Station. The workshop was repeated on July 30 for the second summer session of the day camp. Alpena, Mich., television station WBKB Channel 11 aired a story on the educational experience July 30th. **7/98**

Service Hosts Interns From Northern Wisconsin High Schools

Ashland Fishery Resource Office

Interns from the "Forest Lands Intern Program" (FLIP), at the Cable, Wis., Natural History Museum visited the U.S. Fish and Wildlife Service office on July 30, 1998. The group of 12 high school interns was selected through rigorous competition for the FLIP program, and represent the best and brightest students from northern Wisconsin . The visit included demonstrations of fish sampling equipment, fish ageing using scales and spines, and presentations on native fish restoration, aquatic nuisance species, and Service programs. **7/98**

Region 3 Offices Stock 1.2 Million Lake Trout Fry in Northern Lake Huron

Alpena Fishery Resource Office

Several Region 3 Service offices collaborated to stock 1.2 million lake trout fry on 15 April at the Nordmere Reef in northern Lake Huron. A high resolution underwater video camera was used to select appropriate lake trout habitat and evaluate condition of the stocked fry. Biologists and technicians from the Alpena Fishery Resource Office designed the camera setup and operated it during the stocking. While monitoring the fry stocking with the video equipment, suitable fry habitat was identified and the fry could be seen taking refuge upon release. Use of the camera allowed biologists to be stock fry on suitable habitat and should enhance stocking success. **7/98**

Larval Sea Lamprey Assessment in the Great Lakes

Marquette Biological Station

The Service conducts a sea lamprey control program under contract with the Great Lakes Fishery Commission. During May 1998, one Lake Superior, 17 Lake Michigan, 14 Lake Huron and three Lake Erie tributaries, and 1 Lake Michigan lentic area were examined by assessment personnel. Surveys were conducted to prepare streams for lampricide application in 1998, rank streams for lampricide application in 1999, evaluate the status of larval populations in streams that may be ranked for lampricide application in 1999 and 2000, search for new infestations and conduct biological collections. In addition, staff from participated in a habitat classification training session, which included staff from the Department of Fisheries and Oceans, Canada and the Hammond Bay Biological Station. The successful sea lamprey control program continues to ensure sport fish rehabilitation in the Great Lakes and protect a fishery valued at over $4.0 billion. **7/98**

Adult Lamprey Trapping Completed on Great Lakes' Tributaries

Marquette Biological Station

Trapping of adult lampreys ended recently on all tributaries of the Great Lakes except on the St. Mary's River, a tributary to Lake Huron. More than 53,000 Sea Lamprey were trapped this season. The adult Sea Lamprey trapping season begins in April on the Great lakes, and lasts an average of nine weeks. Trapping on the St. Mary's River does not begin until June, and runs through August. Personnel from the Marquette Biological Station also monitored Sea Lamprey nests in four study streams, the Middle, Misery, Rock, and Big Garlic rivers, tributaries to Lake Superior. The nest study provides a measure of relative year class strengths at the time of hatch. Each parasitic sea lamprey is capable of killing 40 pounds of fish during this destructive, year long parasitic phase. The successful control program continues to ensure sport fish rehabilitation in the Great Lakes and protect a fishery valued at over $4.0 billion. The Service conducts a sea lamprey program under contract with the Great Lakes Fishery Commission. **7/98**

More Than 800,000 Sea Lampreys killed in Great Lakes Streams

Ludington Biological Station

The Service conducts a sea lamprey control program under contract with the Great Lakes Fishery Commission. During June 1998, six tributaries to the Great Lakes were treated with lampricide and about 839,000 larval sea lampreys were destroyed. Included in this total were about 17,800 larvae that would have transformed into the parasitic phase and entered the Great Lakes this year. Each parasitic phase sea lamprey is capable of killing 40 pounds of fish during its year long parasitic phase. The successful control program continues to ensure sport fish rehabilitation in the Great Lakes and protect a fishery valued at over $4.0 billion. **7/98**

Additional Testing Conducted To Remove Ruffe

Ashland Fishery Resource Office

In 1993, Ashland Fishery Resource Office conducted a study to evaluate the effectiveness of bottom trawling in physically removing eurasian ruffe, an aquatic nuisance species. The study demonstrated that bottom trawling may have some potential for removing ruffe in certain sites where ruffe are confined to isolated pools or narrow channels. Following detection of isolated colonies of ruffe in 1997, Ashland Fishery Resource Office designed a plan to conduct follow-up testing of this conclusion in August, 1998. Two isolated colonies were located in Chequamegon Bay on the south shore of Lake Superior. One site, a river mouth, consisted of a narrow channel bordered on both sides by wild rice beds. The other site was located in a thick bed of pondweed, but the bottom was uniform along a gently sloping gradient. Bottom trawling was conducted through these colonies over a two week period separated by a one week interval. Ruffe catch rates were high initially and then declined with the most steady decline occurring in the river site. The results seem to confirm the conclusion made in the 1993 study. As ruffe expansion continues and they move into sites consisting of isolated pools or narrow channels and where the habitat immediately surrounding the pools or channels is not preferred by ruffe, bottom trawling for a two to three week period may have potential in reducing a specific colony and thereby aid in lowering the probability of further spreading from these particular sites. **8/98**

Midwest Tribal Aquiculture Publication (MTAN) Posted to Worldwide Web

Ashland Fishery Resource Office

The Ashland Fishery Resource Office has the unique distinction of providing technical assistance for the development of numerous tribal fish hatchery projects. Ashland Fishery Resource Office also contributes to these tribal hatchery programs by publishing a quarterly newsletter. The Midwest Tribal Aquiculture Network (MTAN) is dedicated to assisting tribal hatchery programs through the sharing of cool/cold water fish culture information and practices. Previous issues of the MTAN have now been linked to the Ashland Fishery Resource Office Home Page along with other tribal hatchery stocking information. Readers can view previous editions of the MTAN by pointing their URL indicator to: *www.fws.gov/r3pao/ashland/mtan/mtanhome.html.* **8/98**

Lake Sturgeon Reintroduced on Menominee Reservation in Wisconsin

LaCrosse Fishery Resource Office

As part of a cooperative management plan involving the Service, the Menominee Indian Tribe of Wisconsin and the Wisconsin Department of Natural Resources, nine adult Lake sturgeon were recently reintroduced to Tribal waters of the Wolf River in Wisconsin. Lake sturgeon historically migrated up the Wolf River to Reservation waters during the spring spawning season. This migration is now blocked by two hydro power dams. The cooperative management plan calls for transfer of adult lake sturgeon to a stretch of the Wolf River on the Reservation as part of an ongoing effort to restore lake sturgeon in this portion of the species' range. Other partners in this effort include the University of Wisconsin School of Veterinary Medicine and U.S. Geological Survey Upper Mississippi Science Center. **8/98**

Erosion Sites Restored on Thunder Bay River Watershed

Alpena Fishery Resource Office

The Thunder Bay River Watershed Restoration Committee has restored 10 of the 11 stream bank erosion sites scheduled for the 1998 field season. One of the larger sites was at a township park used as a canoe launch. Steps were installed to the river's edge, and a canoe launch platform was placed at the base of the steps. Rock rip-rap was placed at the base of the rest of the site. Grasses were planted on the top portion and held in place by jute netting. The other sites were on private

property and were repaired with a combination of tree revetments, rock rip-rap, plantings of grasses and bushes and the utilization of jute netting to stabilize slopes until the grass took root. The last site to complete this summer is very large- 250 feet in length, involves the use of heavy machinery is scheduled to be completed by the end of September. Funding for these restoration activities include grants from the Service's Fisheries Habitat Restoration Proposal, the National Fish and Wildlife Service's Fisheries Across America program, Michigan Department of Natural Resources Inland Fisheries Grants, and the Montmorency County Conservation Club. **8/98**

Rivers, Streams Surveyed as Part of Lake Huron Coaster Brook Trout Study

Alpena Fishery Resource Office

During August Technician Heather Enterline and Biological Science Aide Abdella assessed rivers and streams in the Upper Peninsula of Michigan and in Ontario, Canada. All rivers and streams assessed were reported to support coaster brook trout populations in the past. Unfortunately, few of the streams provided access to spawning grounds or maintained a water temperature that would support juvenile coasters. Streams that maintained good flow and temperature were sampled for coasters with a backpack electro-fisher. Although none of the brook trout caught could be positively identified as coasters, tissue samples were taken from all brook trout, and these streams will be watched carefully in the fall for possible coaster spawning runs. **8/98**

Great Lakes' Streams Assessed for Larval Sea Lamprey

Marquette Biological Station

The Service conducts a sea lamprey control program under contract with the Great Lakes Fishery Commission. During August, 1998, 21 Lake Superior, Michigan, Huron, and Erie streams and lentic areas were examined by assessment personnel. Surveys were conducted to prepare streams for lampricide treatment, search for new infestations, make biological collections, evaluate treatment success, and to make quantitative estimates of population size necessary to determine streams that will require treatment in 1999. The successful sea lamprey control program continues to ensure sport fish rehabilitation in the Great Lakes and protect a fishery valued at over $4.0 billion. **8/98**

Sturgeon Populations Assessed on Great Lakes' Tributaries

Marquette Biological Station

The U.S. Fish a nd Wildlife Service, under contract with the Great Lakes Fishery Commission, assessed lake sturgeon populations in 4 tributaries of the Great Lakes basin during July and August, 1998. Studies were conducted in two tributaries to Lake Superior: the Bad River in Ashland County, Wisconsin, and Sturgeon River in Houghton/Baraga counties, Michigan; and two tributaries to Lake Michigan: the Peshtigo River in Marinette County and Oconto River in Oconto County, Wisconsin). A total of 52 young of the year lake sturgeons were observed in the Bad, Sturgeon, and Peshtigo rivers during both months and no sturgeons were observed in the Oconto River during either month. The sturgeon ranged from 82 to 229 mm total length. The assessments are conducted by visual observation, bottom trawl, seine, and gill net and provide important information used to develop treatment strategies in the Sea Lamprey Management Program. **8/98**

1.7 Million Sea Lampreys Killed in Great Lakes Streams

Ludington Biological Station

The Service conducts a sea lamprey control program under contract with the Great Lakes Fishery Commission. During July 1998, three tributaries to the Great Lakes were treated with lampricide and about 1,745,000 larval sea lampreys were destroyed. Included in this total were about 54,000 larvae that would have transformed into the parasitic phase and entered the Great Lakes this year. Each parasitic phase sea lamprey is capable of killing upwards of 40 pounds of fish during its year long parasitic phase. The successful control program continues to ensure sport fish rehabilitation in the Great Lakes and protect a fishery valued at over $4.0 billion. **8/98**

During July, about 1.75 million larval sea lampreys were destroyed in three Great Lakes tributaries.
- Ludington Biological Station

Service Scours Great Lakes for Sea Lampreys

Ludington Biological Station

The Service conducts a sea lamprey control program under contract with the Great Lakes Fishery Commission. During July 1998, 24 Lake Superior, Michigan and Huron streams and lentic areas were examined by assessment personnel. Surveys were conducted to prepare streams for lampricide treatment, search for new infestations, make biological collections, evaluate treatment success, and to make quantitative estimates of population size necessary to determine streams that will require treatment in 1999. The successful sea lamprey control program continues to ensure sport fish rehabilitation in the Great Lakes and protect a fishery valued at over $4.0 billion. **8/98**

Ashland Fishery Resource Office Accomplishments Posted to Its Home Page

Ashland Fishery Resource Office

Accomplishments of the Ashland Fisheries Resource Office are now posted on the Fishery Resource Office's web page. The Fishery Resource Office can now share our fish and wildlife resource accomplishments with the very people who pay our salaries. The listing our station's accomplishments is the most recent addition to our Home Page (www.fws.gov/r3pao/ashland) to further help inform our cooperators of the resource activities we have concluded, and provide for a better avenue of contact to those staff members associated with specific projects. **9/98**

1.7 Million Sea Lampreys Destroyed, Lake Trout Saved

Ludington Biological Station

The Service conducts a sea lamprey control program under contract with the Great Lakes Fishery Commission. During August 1998, 3 tributaries to the Great Lakes were treated with lampricide and about 1,700,000 larval sea lampreys were destroyed. Included in this total were about 60,000 larvae that would have transformed into the parasitic phase and entered the Great Lakes this year. Each parasitic phase sea lamprey is capable of killing upwards of 40 pounds of fish during its year long parasitic phase. The successful control program continues to ensure sport fish rehabilitation in the Great Lakes and protect a fishery valued at over $4.0 billion. **9/98**

Alpena Fishery Resource Office Begins Detroit River Lake Sturgeon Work

Alpena Fishery Resource Office

Biologist Tracy Hill has been working to complete a Quality Assurance Project Plan (QAPP) for a Detroit River lake sturgeon project being funded by the Environmental Protection Agency's Great Lakes National Program Office. The QAPP is a formal document detailing the quality control and other technical activities to be implemented to ensure satisfactory results of the a proposed project. The Alpena Fishery Resource Office is working jointly with personnel from the U.S. Geological Survey's Great Lakes Science Center on a project to evaluate lake sturgeon spawning habitat in the Detroit River. Alpena staff has been working with sports groups and individuals in the Detroit River area to establish a network of cooperators for assistance on the lake sturgeon project. Biologist Hill will make a presentation to the Down River Walleye Club on September 21, 1998 to inform the club about the lake sturgeon project, and solicit the club's support. Arrangements have been made to tour the river with a local lake sturgeon angler. **9/98**

Great Lakes Lake Sturgeon Web Page Initiated to Consolidate Study Data

Alpena Fishery Resource Office

Biologist Tracy Hill is developing a Great Lakes Lake Sturgeon Web Page. The web page is the result of a project funded by the Great Lakes Basin Ecosystem Team. The page will consolidate information from the numerous Service field stations that are conducting lake sturgeon projects. The web page is a mechanism for sharing information between stations across the basin. It will increase the timeliness of information dissemination and should result in accelerated compilation of data required for restoration and recovery of this depleted native Great Lakes' fish. The page will also serve as a mechanism for educating the general public and scientific community relative to Service roles, responsibilities and activities regarding depleted native species such as lake sturgeon. **9/98**

Service Drafts Recovery Plan For Lake Superior Coaster Brook Trout

Ashland Fishery Resource Office

The Service's plan to rehabilitate the big, colorful, anadromous native coaster brook trout of Lake Superior was presented recently to the Lake Superior Technical Committee (LSTC). The draft plan was presented by Lee Newman of the Service's Ashland Fishery Resources Office. Newman is chairman of the Subcommittee on Brook Trout in Lake Superior (BTSC) and lead editor of the plan. More than two years in development, the recovery plan provides general guidelines for federal, state, provincial and tribal resource management agencies in restoring severely depleted stocks of this native fish. The LSTC and the BTSC will work to make final editorial changes to the plan until the January 1999 meeting of the LSTC, where final approval of the plan is expected. Highlights of the draft plan include recommendations to restore the coaster to as many of its more than 100 native spawning streams as possible under current conditions and to implement programs to restore degraded stream habitats that are no longer able to support coasters. The plan also emphasizes the need for protective management of the few remnant native stocks, and for developing reintroduced stocks. **9/98**

Ashland Begins Salmon Trout River Watershed Project in Michigan

Ashland Fishery Resource Office

The Service recently began work on a cooperative study to inventory the fish, invertebrates and physical parameters of the Salmon Trout River watershed in Michigan's Upper Peninsula. The Ashland Fishery Resource Office has partnered with Michigan Department of Natural Resources and the Huron Mountains Club, a major area land owner, to conduct the study which has also received assistance from the national offices of Trout Unlimited. The goal of the study is to describe the environmental problems that are restricting the productivity of the watershed, and to identify the most effective ways and means of restoring its quality and productivity. It is thought that the primary problems affecting the river are an extremely heavy sand bed load in the stream, the result of a combination of soft, sandy soils that are prone to erosion, and some land use practices that created many sites where erosion could occur. This sand blanketing of the stream bottom covers and eliminates vital habitat for aquatic plants, invertebrates and fish. The Salmon Trout river supports native (stream resident) brook trout populations in its upper reaches and anadromous salmonids (steel heads and coho salmon) in the sections below the falls. The lower river also supports a population of anadromous or "coaster" brook trout. Coasters were once widespread and abundant in Lake Superior. However, the Salmon Trout River is now the only river on the U.S. mainland that still has a reproducing population. In all of Lake Superior, only a few other small populations are known to exist, some on Isle Royale, Mich., and the remainder in Ontario, Canada. **9/98**

Service Secures $55,000 Grant for Lake Sturgeon Restoration Effort

Ashland Fishery Resource Office

The Service in a partnership with Bad River and Red Cliff Bands of Lake Superior Chippewa, have been awarded a $55,000 grant from the U.S. Environmental Protection Agency's Great Lakes Protection Fund to develop sturgeon rearing capabilities and conduct an egg collection and rearing pilot project in 1999. The effort is part of a lake-wide, multi-agency, effort to rehabilitate lake sturgeon populations in Lake Superior. The Bad River is one of only two rivers in U.S. waters of Lake Superior that support a self-sustaining lake sturgeon population. The Service and Tribes will use the grant to develop hatchery facilities and expertise and determine the feasibility of the Bad River serving as a source of eggs. The two Tribes will assist the Service's Ashland Fishery Resources Office collect up to 150,000 eggs from between two to four females and rear fry, fingerlings, and advanced fingerlings. All fish will be released in the Bad River. Assessment efforts to determine the success of stocking efforts will be conducted by Ashland Fishery Resources Office. Eggs collected and reared will be used to augment the Bad River population and assist rehabilitation efforts elsewhere in Lake Superior. **9/98**

Alpena Fishery Resource Office Completes Thunder Bay River Restorations

Alpena Fishery Resource Office

The Thunder Bay River Watershed Restoration Committee has had an extremely productive field season. Ten stream bank erosion sites will be restored on the main branch of the Thunder Bay River by October 2, 1998. Nine of these sites are completed, and the tenth, an enormous endeavor by the Restoration Committee (a 250- foot long, 14-foot high site that required heavy machinery to repair) will be completed before fall gets a grasp on Northern Michigan. Restoration sites varied in size and difficulty. Rock rip-rap was placed at four sites, and on two of those sites stairs to the river and canoe launches were built. Tree revetments were used at the other six sites where accessibility was a challenge, at areas where a more natural look was preferred by the landowner, or in the instance the erosion was not as severe. Eight of the ten sites were on private property. Steps down to the river and canoe launches were built at a township park and at a road crossing. All sites are on the main branch of the Thunder Bay River, and close to the headwaters. The goal of the Thunder Bay River Restoration Committee is to begin at the headwaters and work our way down the watershed as funding is acquired to repair stream bank erosion sites. The majority of the sites are high banks which have been undercut by storm waters. Massive amounts of sand and silt are washed into the river every time a chunk of this land slumps into the water. Basic restoration techniques are used to stabilize these eroding banks using almost exclusively natural materials to create not only a “natural look” for aesthetic purposes but also to add nothing but natural substances to the watershed. The crew labor costs were paid by Michigan Department of Natural Resources Inland Fisheries Grants, while all materials purchased and equipment rented were paid by the National Fish and Wildlife Foundation Fisheries Across America and a Service Fisheries Habitat Restoration Proposal. Technician Heather Enterline of the Alpena Fishery Resource Office oversaw expenditures of the National Fish and Wildlife Foundation and Service grants. **9/98**

Alpena Fishery Resource Office Cultivates Partnerships For Sturgeon Restoration on the Detroit River

Alpena Fishery Resource Office

Service Biologist Tracy Hill of the Alpena Fisheries Resource Office, recently gave a lake sturgeon presentation to the DownRiver Walleye Federation to inform the group about an upcoming lake sturgeon project that the Service will be conducting on the Detroit River. Hill gave an overview of current lake sturgeon work being coordinated at the Fishery Resource Office and explained the Detroit River sturgeon project. The meeting was an excellent opportunity for Service staff to build important partnerships with local organizations on the Detroit River. The DownRiver Walleye Federation was organized to unite sport anglers the fish the lower Detroit River; approximately 70 individuals attended the meeting. **9/98**

Planned Road Crossing Will Control Sediment in Black River Tributary

Alpena Fishery Resource Office

Road Crossing 622 at Canada Creek, a large tributary of the Upper Black River, is one of the largest contributors of silt and sand into the entire Black River watershed. Because the crossing is located at the headwaters of the creek, silt and sediment input adversely affects a genetically pure strain of brook trout that inhabit the watershed. The Upper Black River Watershed Committee, in conjunction with the National Fish and Wildlife Foundation, have formulated a plan to repair the crossing by altering the path of rainwater along the road and ditches to reduce the silt and sand input to the creek. Rainwater will be diverted by lining the ditches with crushed limestone, and by diverting the water running downhill on both sides of the road into a small settling basin. The settling basin will act as a natural filter for the sand and silt and allow the rainwater to enter the creek as groundwater. Originally, the Restoration Committee planned to pave the site. Unfortunately funding has limited us to the project above, however the Montmorency Road Commission has volunteered to seal-coat the portion of the road we were going to pave. **9/98**

Ashland Fishery Resource Office Surveys Streams at Mole Lake Indian Reservation

Ashland Fishery Resource Office

The Ashland Fisheries Resource Office recently conducted a series of inland stream surveys at the Mole Lake Indian Reservation. The purpose of the stream shocking effort was to determine if trout species are present, and if any trout stocking should be recommended for these areas. Length and abundance data were recorded for the trout species collected and a summary report was sent to the Tribe. Significant trout reproduction is occurring at Glishke Creek, and this site may be used to obtain trout for transfer to other streams on the Reservation. Other topic areas that were discussed during this fishery survey included a plan to use our electro fishing boat to collect fish from Bishop and Rice Lakes. These fish samples will be used to test for possible mercury contamination. We also discussed making repairs at the Mole Lake fish hatchery before eggs are received next year and seeking fish culture training opportunities for the Tribal staff. **9/98**

Northern Lake Huron Fish Distribution Study

Alpena Fishery Resource Office

Fishery biologists representing the Bay Mills Indian Community, Chippewa-Ottawa Treaty Fishery Management Authority, Michigan Department of Natural Resources and the Service's Alpena Fishery Resource Office have reached agreement on an assessment study for northern Lake Huron to evaluate the compatibility of gill net fishing for lake whitefish and the ongoing interagency lake trout rehabilitation effort in those waters. A similar study, initiated by the Bay Mills Indian Community was halted in May after the State of Michigan requested and received a temporary restraining order. The Technical Fisheries Review Committee (TFRC), for which the Service is represented by Jerry McClain, Alpena Fishery Resource Office project leader, met in mid-May and established a technical sub-committee and charged them to identify areas of dispute and to develop an assessment study plan. The technical sub-committee, with the Service represented by Tracy Hill of the Alpena Fishery Resource Office, met on four occasions and developed a study plan that was agreed to by all parties and signed by the three TFRC members (Michigan Department of Natural Resources, Chippewa-Ottawa Treaty Fishery Management Authority, and Service). Although much of the first year of the study was lost in the negotiations, the fall and winter of 1998 and the entire 1999 fishing year will be assessed and should provide valuable data needed for negotiating an agreement for allocation of the northern Lake Huron fishery resources in the year 2000. A 15 year agreement is currently in place to address the allocation but will expire in March 2000. **9/98**

USFWS Photo

Trout Receive Antibiotics at Iron River National Fish Hatchery

LaCrosse Fish Health Center

Staffs from several federal hatcheries and one tribal fish hatchery came together recently to assist the LaCrosse Fish Health Center administer an antibiotic to thousands of Lake trout and Coaster brook trout at the Iron River National Fish Hatchery near Ashland, Wisconsin. Bacteria that causes a kidney disease in salmonid was discovered by biologists during a recent routine fish health inspection at the Iron River facility. Erythromycin phosphate, an antibiotic, was injected into the fish to reduce or eliminate the bacterial organism. Partners in the effort included the Iron River, Pendills Creek, and Jordan River National Fish Hatcheries; and the Red Cliff Tribal Fish Hatchery. **9/98**

Upper Mississippi River /Tallgrass Prairie Ecosystem

Round Goby Expands its Range in Chicago Area Waterways

LaCrosse Fishery Resource Office

A series of waterways in metropolitan Chicago connect the Great Lakes and Mississippi River drainage basins. These shipping channels facilitated the spread of the infamous zebra mussel, an exotic nuisance species, to several environmentally sensitive portions of interior North America earlier this decade. Now there is concern that the round goby, a non-indigenous fish recently introduced to the Great Lakes from central Asia, may similarly expand its range to other drainage basins with adverse consequences for native fauna. The La Crosse Fishery Resources Office of the Service recently completed its third annual survey of the distribution of round goby in Chicago area waterways. Cooperators included representatives from four federal, three state, and two regional natural resource agencies. Round goby were captured in the Little Calumet River and the Cal Sag Channel upstream of river mile 318.6, more than 14 miles inland from their point of introduction in southern Lake Michigan. Round goby were not captured in any other portions of the Chicago area waterways we sampled, including sites in the Chicago River (south branch), the Chicago Sanitary and Ship Canal, and the Des Plaines River. These recent results indicate that the range of the round goby expanded more than 2 miles further downstream in Chicago area waterways during the past year. Current year class production and an abundance of favorable (i.e., rocky) habitat for round goby in the Cal Sag Channel are expected to promote its continued downstream movement during the later half of 1998. Therefore, additional periodic surveillance of round goby distribution will be needed to aid in (1) the selection of sites and (2) the preparation of a schedule for the installation of barriers designed to prevent this exotic species from expanding its range into the Illinois and Upper Mississippi Rivers. **6/98**

Walleye Populations Assessed on Northern Wisconsin Lakes

LaCrosse Fishery Resource Office

LaCrosse Fisheries Resource Office recently assisted the Great Lakes Indian Fish and Wildlife Commission and Ashland Fishery Resource Office with walleye population surveys in Northern Minnesota and Northern Wisconsin. More than 20 lakes were sampled. **4/98**

Mississippi River Fish Sampled for National Survey

LaCrosse Fish Health Center

LaCrosse Fish Health Center staff and volunteer Ryan Fritsche, University of Wisconsin-LaCrosse, sampled approximately 150 wild fish from Pool Nine, Upper Mississippi River, from March 30, 1998 through April 17, 1998. Fish were collected by Genoa National Fish Hatchery staff. Bacteriology, parasitology and virology samples were taken from bowfin, carp, spotted sucker, largemouth bass, walleye, redhorse sucker, smallmouth and largemouth buffalo, bluegill, channel catfish, freshwater drum, smallmouth bass, and white bass. Laboratory results will be entered in the National Wild Fish Health database. **3/98**

National Fish Technology Evaluation Team Meets at LaCrosse

LaCrosse Fish Health Center

The National Fish Technology Evaluation Team met in March 1998 at the LaCrosse Fish Health Center in Onalaska, Wis. The Team is composed of deputy assistant regional directors from seven regions and a Washington Office representative. Rick Nelson and Becky Lasee presented the proposal for Fish Technology Center status for LaCrosse Fish Health Center and gave a tour of laboratories and facilities. The Evaluation Team supported the proposal and progress will continue in development of a Fish Technology Center in Region 3. **3/98**

LaCrosse Fishery Pool 12 Dredge Placement Study

LaCrosse Fishery Resource Office

The first week of field work was a success for the Pool 12 Dredge Placement Study. LaCrosse Fishery Resource Office staff conducted the field portion of the study by running water quality, determining habitat and conducting netting and electrofishing. The water was cold and the initial catch was low. This study is co-funded by the U.S. Army Corps of Engineers and the Service. Information gained will be used by managers to make decisions on dredge material placement. **3/98**

Biology Students, Scouts Learn About Spawning Fish

Genoa National Fish Hatchery

Fourteen Biology students from Central High School of LaCrosse, Wis., visited the Genoa National Fish Hatchery to learn about spawning Northern pike. The students observed the hatchery's Northern pike spawning operation and learned how to spawn fish and why hatchery propagation is needed.

Service Attends 1998 Wisconsin Aquaculture Conference

LaCrosse Fish Health Center

Richard Nelson, Project Leader, LaCrosse Fish Health Center (Onalaska, Wis.) attended the Wisconsin Aquaculture Advisory Board Committee Meeting on March 12, 1998 in Eau Claire, Wis. On March 13-14, 1998, Richard Nelson and Myron Kebus (DVM, WAVS) conducted a joint workshop on Fish Health Management at the Wisconsin Aquaculture Conference in Eau Claire. Fish health brochures and books were available and question and answer sessions were held. Approximately 500 people attended. **3/98**

Hatchery Participates in Crawford County Career Fair

Genoa National Fish Hatchery

Crawford County, Wisconsin, held a career fair for high school sophomores in the three school districts in the county. The Genoa National Fish Hatchery was asked to participate to present career opportunities within the Service. Over 500 students participated in the career fair. **3/98**

More Than 1,500 Fish Screened for Diseases in February

LaCrosse Fish Health Center

The LaCrosse Fish Health Center received and processed over 1,500 fish, representing 31 separate lots, during the month of February 1998. Casework included screening lake trout from three federal hatcheries (Iron River, Pendill's Creek and Jordan River) for Bacterial Kidney Disease and screening wild fish at the Castalia State Fish Hatchery for Infectious Pancreatic Necrosis Virus. Bloater Chubs from Lake Huron were also shipped to the Center by Mark Ebener, Chippewa/Ottawa Treaty Fish Management Authority, for a complete diagnostic examination. **2/98**

Health Assessments Completed at Genoa National Fish Hatchery

LaCrosse Fish Health Center

Ken Phillips and Chelsea Berg completed a fish health quality assessments on one lot of Rainbow trout at the Genoa National Fish Hatchery on March 9, 1998. Suzanne Woolley and Audrey Dikkeboom completed the semi-annual disease inspection at the Genoa National Fish Hatchery on March 10, 1998. Disease samples will be processed in the laboratory and the final lab results available in approximately three to four weeks. **3/98**

Senator Feingold's Regional Coordinator Visits Hatchery

Genoa National Fish Hatchery

Matthew Nickolay, Regional Coordinator for Senator Russ Feingold's office, visited the Genoa National Fish Hatchery to learn about the hatchery. He toured the facility, learned about the role the hatchery plays in the Service's fisheries priorities, and met the hatchery personnel. This was the first time he has visited the hatchery and wanted to become familiar with the various federal facilities in his region. **2/98**

Keynote Address Presented to Wisconsin Chapter, American Fisheries Society

Large River Fisheries Coordination Office

Jerry Rasmussen presented one of two keynote addresses to the Wisconsin Chapter of the American Fisheries Society annual meeting in Eau Claire. He presented a paper he first presented at the 1996 annual meeting of the American Fisheries Society in Dearborn, Michigan. The paper entitled "Forty Years of Controversy and Achievement in North American Fisheries — Riverine Fisheries" describes some of the impacts man has had on riverine resources; current thinking in riverine fisheries resources management; and actions to offset man's impacts and return our rivers or portions of their flood plains to a more natural state. The theme of the statewide meeting was riverine ecology and management. **1/98**

LaCrosse River Eagle Watch a Success

Upper Mississippi River National Wildlife and Fish Refuge

The Eagle Watch was held December 20 - 21, 1997, and January 3 - 4, 1998. This was the first organized Eagle Watch held in the LaCrosse, Wisconsin area. More than 400 people who participated in the event, which was advertised in several local newspapers, and given top billing on two local television broadcasts after the opening day. The event was made possible through a Service Challenge Cost Share which was used to purchase equipment needed for the event. **1/98**

Meeting to Develop Video on Investigative New Animal Drug Process

LaCrosse Fish Health Center

Meeting members brain stormed for a day at the National Conservation Training Center in Shepherdstown, W.Va., to develop a 15-20 minute video on the role Investigative New Animal Drugs (INAD) will have in generating approved chemotherapeutants in the aquaculture industry. There is concern within the Service that federal, state, Tribal and private fish growers are not aware of the importance of work being done by the Service in developing these drugs. With the assistance of Cathy Johnson at National Conservation Training Center, the members feel confident in developing a professional video to be distributed for public viewing in August 1998. **12/97**

Paddlefish Eggs Used in International Caviar Trade

Large River Fisheries Coordination Office

At the request of the Service's Washington, D.C. office, the Large River Fisheries Coordination Office prepared a summary of actions taken by the Mississippi Interstate Cooperative Resource Association (MICRA) and the states in response to the expected increase international sale of paddlefish eggs. The eggs are being used as surrogates for sturgeon eggs in the making of caviar. The issue was escalated during the year by a three metric ton permit application received by the Service to export paddlefish eggs from Kentucky to Japan. Sturgeon populations worldwide are under intense fishing pressure since the dissolution of the Soviet Union. International action was taken by the CITES in June to severely restrict the export of sturgeon and paddlefish eggs worldwide. This is expected to pressure North American populations of paddlefish and sturgeon to support the domestic caviar industry. The U.S. is by far the largest importer of caviar. MICRA is currently considering closing the commercial fisheries for both sturgeon and paddlefish. **12/97**

River Sedimentation Effects Explained to QC Propellor Club

Large River Fisheries Coordination Office

The Large River Fisheries Coordinator joined the QC Propellor Club last winter and has since worked toward establishing relationships with industry officials, U.S. Army Corps of Engineers personnel, and watercraft owners involved in the river navigation expansion issue. Members of the QC Propellor Club received Service presentation on the impacts of sedimentation and dredging on fish and wildlife resources. The goal is to have members of these organizations view Service concerns from an "associate" point of view rather than from an "adversarial" position. **11/97**

Service Represented at Native American Environmental Conference

LaCrosse Fishery Resource Office

The Prairie Island Dakota Community hosted the 4th Annual Native American Conference on Environmental Issues in May. Several hundred representatives from around the country attended the three day conference. Service staff from LaCrosse Fishery Resource Office and Twin Cities Field Office set up an information booth and addressed questions from conference participates. **5/98**

Sturgeon Survey Finds Log Jams, Gil Nets Limiting Sturgeon Activity

Ashland Fishery Resource Office

At the request of the U.S. Forest Service's Tofte District Office in northern Minnesota, the U.S. Fish and Wildlife Service's Ashland Fishery Resource Office conducted a two-year survey of the Sturgeon River to determine the relative abundance of sturgeon now using the upper section of the river that borders the Superior National Forest. Over the span of the study, six weeks were spent using collection gear that included gill nets, larval drift nets and electrofishing. The results of our effort collected only four fish. Our conclusion is that the lower river is still being used as spawning areas. However, we believe that very few sturgeon, if any, are still utilizing the upriver sections that border the Superior National Forest. Two other important facts were discovered during this survey: 1) Severe log jams exist that will severely limit adult sturgeon from upstream migration.

This problem was brought to the attention of the Minnesota Department of Natural Resources and now the log jams will soon be removed. 2) Illegal gill and trap netting has occurred and continues on the river. The Minnesota Department of Natural Resources has been notified and law enforcement officials will be watching this river system more closely. The U.S. Forest Service, Minnesota Department of Natural Resources and the Nett Lake\Bois Forte Indian Reservation are working with the Ashland Fishery Resource Office to develop a sturgeon restoration program for the Sturgeon River. This project is in the developing stages and a restoration plan still needs to be approved. However, the potential of a successful restoration effort is very high due to the abundance of gametes from the Rainy River which is just down river from the Sturgeon River system. **6/98**

Ashland's Sturgeon River Restoration Plan Submitted to U.S. Forest Service

Ashland Fishery Resource Office

Frank Stone finished the first draft of a sturgeon restoration proposal for the Sturgeon River, Minnesota, that will be submitted to the U.S. Forest Service. If accepted, this proposal will involve collecting sturgeon gametes from the Rainy River system and transferring them to the Sturgeon River. The staff from Ashland Fishery Resource Office may be contracted by the Forest Service to assist with the collection and transfer of these eggs. The Forest Service first contacted the Ashland Fishery Resource Office in 1997 to request assistance in determining if adult lake sturgeon are still present in the Sturgeon River. During a three-week field assessment, only one lake sturgeon was collected. This fish species is important to the Forest Service and they want to manage Forest Service waters adequately if lake sturgeon are still reproducing in this river system. Because of the cyclic nature of lake sturgeon migration during normal spawning periods, the Forest Service requested that a follow-up assessment should be conducted , again, by the Ashland Fishery Resource Office. The second survey found only three adult lake sturgeon in the lower stretches of the Sturgeon River. No sturgeon were seen during the previous surveys within or adjacent to the Superior National Forest boundaries. Observations made during this period also noted that suitable spawning habitat appears to be adequate to support lake sturgeon within the upper sections of the river. The draft proposal will soon be sent to the Forest Service for further review and comment. Additional cooperators with this proposal include the Minnesota Department of Natural Resources, Nett Lake-Bois Forte Indian Reservation Nett Lake, Minnesota, and the Rainy River First Nation Emo, Ontario. **8/98**

LaCrosse Fishery Resource Office Assists With Water Quality Sampling.

LaCrosse Fishery Resource Office

LaCrosse Fishery Resource Office was contracted by the U.S. Geological Survey to assist with fishery sampling on three Central Iowa streams as a portion of the National Water Quality study. Electrofishing sampling was conducted from August 18 - 20, 1998. All fish collected were identified to species, weighted and measured. **8/98**

Carterville Office Assists Staffs at Rock Island and Crab Orchard Refuge

Carterville Fishery Resource Office

Carterville Fishery Resource Office assisted the Crab Orchard National Wildlife Refuge Contaminants staff during Fiscal Year 1998 by providing fisheries technical assistance, serving on the BTAG Committee, and sampling fish populations for contaminant analysis. Carterville also assisted the Rock Island Field Office staff in preparing a section on fish passage for the Upper Mississippi River Navigation Study. **9/98**

Mississippi River Fish Sampled for National Survey

LaCrosse Fish Health Center

LaCrosse Fish Health Center staff and volunteer Ryan Fritsche, University of Wisconsin-LaCrosse, sampled approximately 150 wild fish from Pool Nine, Upper Mississippi River, from March 30, 1998 through April 17, 1998. Fish were collected by Genoa National Fish Hatchery staff. Bacteriology, parasitology and virology samples were taken from bowfin, carp, spotted sucker, largemouth bass, walleye, redhorse sucker, smallmouth and largemouth buffalo, bluegill, channel catfish, freshwater drum, smallmouth bass, and white bass. Laboratory results will be entered in the National Wild Fish Health database. **3/98**

National Fish Technology Evaluation Team Meets at LaCrosse

LaCrosse Fish Health Center

The National Fish Technology Evaluation Team met in March 1998 at the LaCrosse Fish Health Center in Onalaska, Wis. The Team is composed of deputy assistant regional directors from seven regions and a Washington Office representative. Rick Nelson and Becky Lasee presented the proposal for Fish Technology Center status for LaCrosse Fish Health Center and gave a tour of laboratories and facilities. The Evaluation Team supported the proposal and progress will continue in development of a Fish Technology Center in Region 3. **3/98**

Hatchery Begins Spring Spawning of Northern Pike

Genoa National Fish Hatchery

The staff at the Genoa National fish Hatchery began netting to collect northern pike brood stock from the Mississippi River on March 23, 1998. Along with collecting the brood fish, the hatchery staff is collecting other species used in research at the Upper Mississippi Science Center, and fish to be sampled for the Service's wild fish health survey. As of March 27, 1998, five million green eggs have been collected to be used in stocking programs which meet Service fisheries priorities. **3/98**

LaCrosse Fishery Pool 12 Dredge Placement Study

LaCrosse Fishery Resource Office

The first week of field work was a success for the Pool 12 Dredge Placement Study. LaCrosse Fishery Resource Office staff conducted the field portion of the study by running water quality, determining habitat and conducting netting and electrofishing. The water was cold and the initial catch was low. This study is co-funded by the U.S. Army Corps of Engineers and the Service. Information gained will be used by managers to make decisions on dredge material placement. **3/98**

Mississippi Headwaters / Tallgrass Prairie Ecosystem

Health Assessment of Shovelnose Sturgeon Conducted at Two Mississippi River Sites

LaCrosse Fish Health Center

Shovelnose sturgeon were sampled from two sites on the Mississippi River by Ken Phillips and Chelsea Berg , LaCrosse Fish Health Center, and Mike Coffey of the Rock Island Field Office. Twenty - four sturgeon were sampled from Pool 16 near Davenport, Iowa, on October 30, 1997 and 17 sturgeon from the Mississippi River near Sainte Genevieve, Mo., on November 20, 1997. Upon completion of laboratory assays, results will be entered into the National Wild Fish Health Survey database. **12/97**

Red Lakes Walleye Fishery Restoration Plan Completed

Ashland Fishery Resource Office

The Upper and Lower Red Lakes of northwestern Minnesota are "walleye factories" that have produced yield of millions of pounds of walleye for generations, benefitting Chippewa Indians on the Red Lake Reservation and Minnesota anglers. Over harvest and uncoordinated management resulted in severe depletion of the walleye stocks. Now, for the first time, the state and tribal governments responsible for management have forged a partnership to bring back the fishery, with assistance from federal agencies and the University of Minnesota. The plan calls for zero mortality of walleye until restoration milestones are reached. The Service also assisted the Red Lake Band in assessing the status of walleye reproduction in Lower Red Lake. **3/98**

LaCrosse Hosts Lake Sturgeon Coordination Meeting

LaCrosse Fishery Resource Office

LaCrosse Fishery Resource Office held a coordination meeting to present the White Earth lake sturgeon management plan. All comments were positive and the cooperating agencies support the project fully. **4/98**

Ashland Fishery Surveys Lakes on Red Lake Indian Reservation

Ashland Fishery Resource Office

During the month of June, 1998, three inland lake surveys were conducted by the Ashland Fishery Resource Office on the Red Lake Indian Reservation. The first was a largemouth bass population estimate conducted on Fullers Lake. The project involved collecting bass and giving them a partial fin clip to identify them as part of this study. Two days later, after the first survey was completed, the crew conducted another night of electrofishing. Largemouth bass are once again collected from Fullers Lake and examined for previous fin clips. The result of the two assessments yields a set of data that can be used to establish a population estimate for largemouth bass. This information is used by Tribal biologist to better understand if catch restrictions are needed for this fishery. Two other fishery surveys were conducted on the Reservation (Morrison and Green Lake). The assessment of Green Lake was of special importance due to the decline of lake herring that was detected after the last survey. The catch results from this most recent survey were indeed encouraging because the data showed that lake herring are once again rebounding within this fishery. The Ashland Fishery Resource Office has been assisting the Red Lake Indian Reservation with inland fishery surveys for the past ten years. The information collected is used by Tribal resource managers to better understand the trend in which these fisheries are going so better management options can be selected. **6/98**

Bottom Trawling Used in Red Lake Fishery Survey

Ashland Fishery Resource Office

Ashland Fishery Resource Office successfully used bottom trawling to assist the Red Lake Band of Chippewa in performing a fish community assessment in the Upper and Lower Red Lakes. This is the first time that Ashland Fishery Resource Office has used bottom trawling to assess a tribal fishery. The survey was prompted in order to determine the status of walleye recruitment in the wake of a declining walleye fishery and to determine the status of forage fish stocks for supporting walleye.. Forty-five tows of 5-minute duration were completed during the week of August 10th with no obstructions encountered. No walleye were caught, but forage fish were very abundant. The two most abundant species collected were yellow perch followed by spottail shiner. Other species collected included freshwater drum, emerald shiner, trout-perch, logperch,bluegill, largemouth bass, burbot, and lake whitefish. This information will be used to support an intensive walleye restoration plan consisting of restocking and more restrictive catch regulations. Pat Brown, tribal fisheries biologist, was pleased with the effectiveness and ease of this sampling method for replacing the much more labor intensive and time consuming seining method. **8/98**

Federal Services Partner to Survey Streams on Chippewa National Forest

Ashland Fishery Resource Office

The Ashland Fishery Resource Office recently conducted fishery assessments on several streams within the Chippewa National Forest. The objective of the sampling effort was to determine what fish species are found in small and medium-sized streams within these stream segments. In previous years, the U.S. Forest Service has utilized only minnow traps to determine fish species diversity within these streams. Chippewa National Forest Fishery Biologist Chantel Cook contacted Frank Stone of the Ashland Fishery Resource Office, to request Service assistance with additional fish collection using backpack electrofishing techniques. This would enable the U.S. Forest Service to verify both species composition and relative abundance. The Chippewa National Forest is in the process of testing an ecological classification system (Rosgen Stream Classification) of streams that lie within its borders. The information gained from these fishery surveys will be used by the Forest managers for planning and environmental analyses, and documenting environmental effects of forest management practices. **8/98**

Sub-Basin Fishery Groups Unite Resources Under MICRA

Large River Fishery Coordination Office

The six major fish management groups within the Mississippi River Basin have agreed to serve on an Executive Board under the Mississippi Interstate Cooperative Resource Association (MICRA) to advance the science and management of interjurisdictional river fisheries within the 28 - state basin. The group met for the first time May 12-13, 1998, in St. Louis to lay the ground work for future cooperative efforts. This action will help to eliminate any confusion which may exist between the roles of the various groups, eliminate any duplication of effort lead to future partnerships in fishery resource management. **5/98**

Paddlefish - Sturgeon Concerns Subject of Service White Paper

Large River Fishery Coordination Office

A white paper voicing Service and States' concerns over potential use of paddlefish and native sturgeon species as surrogates in the caviar production industry was presented during the 54th annual meeting of the Upper Mississippi River Conservation Committee (UMRCC) held recently in Moline, Ill. Diminishing populations of European sturgeon species are putting pressure on domestic sturgeon to meet demand for caviar. The Service's role in new CITES (Convention on International Trade in Endangered Species) regulations were discussed as was the Mississippi Interstate Cooperative Resource Association's (MICRA) basin-wide paddlefish stock assessment. **5/98**

Service Represented at Catfish 2000 Workshop in Davenport, Iowa

Large River Fisheries Coordination Office

The Service's Large River Fishery Coordinator attended Catfish 2000 -- the 1st International Ictalurid Symposium held June 23-25, 1998, at the River Center in Davenport, Iowa. The symposium assembled scientists, biologists, resource managers, fishermen, and vendors of fishing equipment at a common forum to exchange information on ictalurid catfish and to further the interests of these important game fish. A workshop of resource managers and scientists met in conjunction with the symposium to identify strategies, and prioritize actions to improve North American catfish populations for the future. **6/98**

Fishery Habitat Restoration Plans Being Developed

Large River Fisheries Coordination Office

The Large River Fisheries Coordinator, through his role as MICRA (Mississippi Interstate Cooperative Resource Association) coordinator - executive secretary, developed and won acceptance by MICRA a Federal Aid funding proposal for evaluating the North American Waterfowl Management Plan to assess the feasibility a similar program for fisheries in the Mississippi River Basin. The proposal also has tentative approval of the Service directorate and the International Association of Fish and Wildlife Agencies. This would tentatively begin a three - year effort during which time potential projects could be developed and partners identified. **7/98**

Workshops Drafts Fishable Waters Act to Protect U.S. Waters

Large River Fisheries Coordination Office

The Large River Fisheries Coordinator Jerry Rasmussen, working through Service Assistant Director Gary Edwards, worked with sponsors to develop language for a bill which is intended to enhance the protection of the nation's waters from non-point source pollution. The bill recommends establishment of interdisciplinary watershed councils to develop plans for reducing non - point source pollution runoff and improving the Nation's rivers for fish and fishing. It relies on incentive programs and willing landowners for implementation of measures to improve high quality as well as impaired waters. The focus, however, will be on protecting high quality waters first rather than polluted areas. Measures recommended for improving the Nation's waters include the following: in - stream modifications and structures; stream - side vegetation; modifications to flood control measures and structures to improve connection of rivers to low-lying areas such as backwaters, side channels, oxbows and tributary mouths; improvement of flood - plain management practices and flood control programs; improved stream flow control practices to stimulate more natural flow regimes; flood response and disaster-relief planning and measures that will preserve or improve habitat integrity in connection with decisions regarding flood response, cleanup, levee restoration, or other alternatives following future floods; and other appropriate techniques for the protection or improvement of fisheries habitat. **8/98**

Service Co-Authors Present Paddlefish Study Findings to American Fisheries Society

Carterville Fishery Resource Office

Greg Connover, and Joanne Grady of the Service's Carterville Fisheries Resource Office delivered preliminary findings of a two-year paddlefish study at a meeting of the American Fisheries Society in Hartford, Connecticut. The paper, co-authored by researchers from Tennessee Technological University, provided findings of a two - year study of paddlefish sponsored by the Mississippi Interstate Cooperative Resource Agency (MICRA.) The paper describes results of MICRA's large-scale, tag-and-release study initiated in 1995. Information gathered during the 22-state effort is maintained in a database by the Service. Paddlefish have been an important fisheries resource in North America since the late 1800s. With increasing demands for paddlefish,

improved capture efficiencies, and alterations of critical spawning habitats, paddlefish populations have declined in many locales and been extirpated in several areas. The contribution of hatchery paddlefish to the wild populations are becoming apparent as stocked fish recruit to commercial and recreational fisheries throughout the basin. Since MICRA's inception in 1995, cooperators have tagged and released over 400,000 juvenile hatchery paddlefish. Over 4,200 adult wild paddlefish have also been tagged and released with unique sequential codes. Sampling by field biologists and examinations of commercial catches have yielded data on 444 tagged paddlefish. Most (72-percent) of these recaptures were hatchery fish that had been tagged and released prior to 1995. The contribution of hatchery paddlefish to the wild populations are becoming apparent as stocked fish recruit to commercial and recreational fisheries throughout the basin. Preliminary results indicate that effective management of paddlefish will require the cooperation of many state agencies responsible for managing this important resource. **9/98**

Service Establishes Data Processing Center For MICRA Paddlefish Study

Carterville Fishery Resource Office

The Service coordinates and manages a basin-wide paddlefish coded wire tagging project initiated by the Mississippi Interstate Cooperative Resource Association (MICRA). The Service established a coded-wire tag data processing center, with operations at two locations in Region 3, to work with the 22 participating MICRA-member states and other cooperating agencies. The center provides crucial coordination and a stable base of technical support to the project's participants. The scope of and demand for these services has already expanded. In addition to supporting project coordination, in Fiscal Year 1998, we processed an estimated 5,000 sequentially coded wire reference tags for wild captured paddlefish, reference tags for 150,000 hatchery reared paddlefish, 300 recovered coded-wire tags from recaptured paddlefish, incoming data for over 200 field sampling trips made by biologists in 19 states, incoming data for 30 hatchery stockings in 6 states, and incoming data from commercial and recreational fisheries. All data are stored in a database for annual analysis and report preparation. The coded wire tagging center generates data summary reports for each participating state or agency, as well as a consolidated annual report for MICRA. **9/98**

Ashland Conducts Customer Survey

Ashland Fishery Resource Office

In November 1997, the Ashland Fishery Resources Office repeated a "customer" survey, done for the first time in 1992. The one-page, postage-paid questionnaire asked respondents to list three good things done in the past, three unmet resource needs, problems experienced, and program changes needed. Recipients included state, federal, and tribal agencies in Minnesota, Wisconsin, and Michigan. Twenty-two responses were received, providing guidance for future cooperative activities. **11/97**

Fishery Specialists Part of Interagency Paddlefish Study

Columbia Fishery Resource Office

Specialists from Service fishery resource offices in Columbia, Mo., and Carterville, Ill., met recently with representatives from the 22 state and federal agencies participating in MICRA's (Mississippi Interstate Cooperative Resource Association) Paddlefish Coded Wire Tagging Project to review study protocol and define incoming data problems. The project will acquire data on tagged hatchery-raised and wild paddlefish. The collected data is expected to capture paddlefish population size, exploitation rates and movements. MICRA is a forum for states that share the Mississippi River to discuss interjurisdictional issues, and share resources. **5/98**

LaCrosse Presents 'Introduction to Fish Health Management' Course

LaCrosse Fish Health Center

The LaCrosse Fish Health Center staff instructed a five - day "Introduction to Fish Health Management," course from February 9 - 13, 1998 in Onalaska, Wisconsin. A total of 13 students participated in the course including state, tribal, commercial, and federal biologists from across the United States. Lecture topics included stress management, parasitology, bacteriology, virology, drug treatments and calculations, and environmental and nutritional diseases. Laboratory instruction included preliminary identification of bacterial and parasitic agents, preparation and shipment of health samples, and a field trip to the Genoa National Fish Hatchery, Genoa, Wisconsin. Course instructors included Rick Nelson, Becky Laser, Terry Ott, John Whitney, Ken Phillips, and Mike Systma. **2/98**

Lake Sturgeon Restoration Topic of Coordination Meeting

LaCrosse Fishery Resource Office

A coordination meeting was held in St. Cloud, Minn., involving LaCrosse Fishery Resource Office, White Earth Biology Department, and the Minnesota Department of Natural Resources (Fisheries). Main topics were lake sturgeon restoration, 1997 and 1998 fish management activities, Marsh Creek impoundment and fish genetic issues. The meeting was extremely productive with group consensus on most of the issues. **2/98**

Ohio River Ecosystem

none

Ozark/Arkansas Rivers Ecosystem

Neosho Hatchery Cultures Freshwater Mussels

Neosho National Fish Hatchery

The Neosho National Fish Hatchery has been defining and researching culture techniques for freshwater mussels for several years. Through the cooperation of partners within and out of the Service, the first successful rearing of *Lampsillis* species of mussels occurred. These techniques developed on common species of mussels will allow the Service to apply them to many species of mussels already threatened by extinction. **1/98**

Neosho National Fish Hatchery stocks 40,000 Fingerling Walleye

Neosho National Fish Hatchery

In a cooperative effort to enhance sport fisheries in Southwest Missouri, the Neosho National Fish Hatchery reared and stocked 40,000 fingerling walleye for release into a Southwest Missouri Federalwater project. Neosho reared walleye fry provided by the state of Missouri until the fish reached a large enough size to ensure good survival in a large reservoir system. Neosho also released 25,000 state reared walleye into the reservoir, consolidating state and federal stocking efforts. **7/98**

Lower Missouri River Ecosystem

Missouri River Anglers Aid Paddlefish Research

LaCrosse Fishery Resources Office

The Missouri River paddlefish season in South Dakota and Nebraska is providing an excellent opportunity to continue development of non-lethal sampling methods being developed by the Service and University of Wisconsin School of Veterinary Medicine and the University of California Moss Landing Marine Laboratory. The paddlefish has long been a state-listed threatened species in both Minnesota and Wisconsin where it is protected. However, the current status of paddlefish populations in these states is largely unknown because biological data is not routinely gathered for this non-game species. A portion of this deficiency exists because biologists have typically relied on invasive, (and often lethal) sampling techniques to determine characteristics such as paddlefish gender and age. The LaCrosse Fishery Resources Office is evaluating alternative methods to determine paddlefish gender and age, respectively, by invasive means that will insure the well-being and survival of individual fish. These non-lethal methods include ultrasound-guided biopsy of gonadal tissue for histological determination of sex and biopsy of dentary bone for radiometic determination of age. In order to increase the accuracy and precision of this new sexing method, many paddlefish of various sizes need to be examined. Validation of the new aging method also required sacrificing several fish to compare the radioisotope composition of dentary bone and otoliths. **10/97**

Poster Presented at Missouri Natural Resources Conference

Columbia Fisheries Resource Office

Joanne Grady and Jim Milligan, of the Columbia Fisheries Resource Office, presented a poster of their 1997 Missouri River chub and minnow survey at the 1998 Missouri Natural Resources Conference. The survey confirms concerns regarding the decline of the flathead chub and Western silvery minnow. **2/98**

Columbia Fishery Resource Office Hosts Visiting Missouri River Author

Columbia Fishery Resources Office

Author Dr. Daniel Botkin, toured refuge area and discussed Missouri River natural resource issues with Service staff during a spring visit to the Big Muddy National Wildlife and Fish Refuge. Dr. Botkin is a noted author, researcher, ecologist and President of The Center For The Study Of The Environment who is gathering background information for a new book, "The American Rivers Guidebook to The Travels of Lewis and Clark on: The Missouri River". Dr. Botkin seemed pleased with the Service's concept of restoring portions of riverine habitat using natural processes of erosion, deposition and succession to the greatest extent possible. **4/98**

Columbia Office Monitoring Fish at Big Muddy Refuge

Columbia Fishery Resources Office

Columbia Fishery Resource Office conducted fish sampling in the waters of the Lisbon Bottoms Unit of the Big Muddy National Wildlife and Fish Refuge from May 18 - 22, 1998. Lower Missouri River Ecosystem Partners from Missouri Department of Conservation and U.S. Geological Survey, assisted in fish and invertebrate sampling. Routine surveys are conducted to determine use of the unique self-restored river chute by interjurisdictional and candidate fish species. Routine surveying allows us to monitor changes in the fish community over time. This information assists the Refuge in negotiations with the U.S. Army Corps of Engineers regarding chute modifications. **5/98**

Missouri River Subject of Service Presentation to 'Wetlands 98' Managers

Large River Fisheries Coordination Office

The impacts of channelization and development on Missouri River fisheries and the Service's proposed "passive" floodplain restoration program were the topics of a Service presentation to the Association of State Wetland Managers. Jerry Rasmussen, the Large River Fisheries coordinator made the presentation at the association's Wetlands 98 conference in St. Louis on September 20-25. The 25 minute slide presentation described the impacts of channelization and development on the Missouri River ecosystem, and described the "habitat bead" concept that is proposed for re-establishing the integrity of the river's ecosystem. The presentation also discussed the Big Muddy National Wildlife and Fish Refuge, and made suggestions for improving relations with floodplain farmers and landowners. The presentation was well received by those in attendance, including Ron Kucera, representing the Missouri Department of Natural Resources and the Governor's office. Kucera's presentation mentioned Missouri's proposal to recommend establishment of a "John C. Danforth National Fish and Wildlife Refuge" on the Middle Mississippi River (downstream from St. Louis,) that would mirror the "Big Muddy's" proposal for "passive" management of the floodplain ecosystem for fisheries and wildlife. **9/98**

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